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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2018-0932; Special Conditions No. 25-733-SC]

Special Conditions: Mitsubishi Aircraft Corporation Model MRJ-200 Airplane; Passenger Seats with Non-Traditional, Large, Non-Metallic Panels

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Mitsubishi Aircraft Corporation Model MRJ-200 airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. These design features include passenger seats that incorporate non-traditional, large, non-metallic panels in lieu of the traditional metal frame covered by fabric. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: This action is effective on Mitsubishi Aircraft Corporation on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Send comments on or before [INSERT DATE 45 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Send comments identified by Docket No. FAA-2018-0932 using any of the following methods:

- *Federal eRegulations Portal:* Go to <http://www.regulations.gov/> and follow the online instructions for sending your comments electronically.
- *Mail:* Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov/>, including any personal information the commenter provides. Using the search function of the docket Web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the *Federal Register* published on April 11, 2000 (65 FR 19477-19478).

Docket: Background documents or comments received may be read at <http://www.regulations.gov/> at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Nicholas Wilson, International Section, AIR-676, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service, Federal Aviation Administration, 2200 South 216th Street, Des Moines, Washington 98198; telephone and fax 206-231-3230; e-mail Nicholas.Wilson@faa.gov.

SUPPLEMENTARY INFORMATION: The substance of these special conditions has been published in the *Federal Register* for public comment in several prior instances with no substantive comments received. The FAA, therefore, finds it unnecessary to delay the effective date and finds that good cause exists for making these special conditions effective upon publication in the *Federal Register*.

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive by the closing date for comments. We may change these special conditions based on the comments we receive.

Background

On August 19, 2009, Mitsubishi Aircraft Corporation applied for a type certificate for their new Model MRJ-200 airplane. The Mitsubishi Aircraft Corporation Model MRJ-200 airplane is a low-wing, conventional-tail design with two wing-mounted turbofan engines. The primary structure is metal with an aluminum wing and composite

empennage. The airplane is equipped with an electronic flight control system. The airplane has seating for 96 passengers and a maximum takeoff weight of 98,800 lbs.

Type Certification Basis

Under the provisions of title 14, Code of Federal Regulations (14 CFR) 21.17, Mitsubishi Aircraft Corporation must show that the Model MRJ-200 airplane meets the applicable provisions of part 25, as amended by amendments 25-1 through 25-141; part 36, as amended by amendments 36-1 through 36-30; and part 34, as amended by amendments 34-1 through the amendment effective at the time of design approval.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Mitsubishi Aircraft Corporation Model MRJ-200 airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Mitsubishi Aircraft Corporation Model MRJ-200 airplane must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.17(a)(2).

Novel or Unusual Design Features

The Mitsubishi Aircraft Corporation Model MRJ-200 airplane will incorporate the following novel or unusual design features:

Passenger seats that incorporate non-traditional, large, non-metallic panels in lieu of the traditional metal frame covered by fabric.

Definition of “Non-Traditional, Large, Non-Metallic Panel”

A non-traditional, large, non-metallic panel, in this case, is defined as a panel with exposed surface areas greater than 1.5 square feet installed per seat place. The panel may consist of either a single component or multiple components in a concentrated area. Examples of parts of the seat where these non-traditional panels are installed include, but are not limited to: seat backs, bottoms and leg/foot rests, kick panels, back shells, credenzas and associated furniture. Examples of traditional exempted parts of the seat include: arm caps, armrest close-outs such as end bays and armrest-styled center consoles, food trays, video monitors and shrouds.

Clarification of “Exposed”

“Exposed” includes those panels directly exposed to the passenger cabin in the traditional sense, plus those panels enveloped such as by a dress cover. Traditional fabrics or leathers currently used on seats are excluded from these special conditions. These materials must still comply with 14 CFR 25.853(a) and (c) if used as a covering for a seat cushion, or 14 CFR 25.853(a) if installed elsewhere on the seat. Non-traditional, large, non-metallic panels covered with traditional fabrics or leathers will be tested without their coverings or covering attachments.

Discussion

In the early 1980s, the FAA conducted extensive research on the effects of post-crash flammability in the passenger cabin. As a result of this research and service experience, the FAA adopted new standards for interior surfaces associated with large surface area parts. Specifically, the rules require measurement of heat release and smoke emission (part 25, appendix F, parts IV and V) for the affected parts. Heat release has been shown to have a direct correlation with post-crash fire survival time. Materials that comply with the standards (i.e., § 25.853, Compartment interiors, as amended by amendment 25-61 and amendment 25-66) extend survival time by approximately two minutes over materials that do not comply.

At the time these standards were written, the potential application of the requirements of heat release and smoke emission to seats was explored. The seat frame itself was not a concern because it was primarily made of aluminum and there were only small amounts of non-metallic materials. It was determined that the overall effect on survivability was negligible, whether or not the food trays met the heat release and smoke requirements. The requirements, therefore, did not address seats. The preambles to both the Notice of Proposed Rulemaking, Notice No. 85-10, 50 FR 15038, April 16, 1985, and the Final Rule, amendment 25-61, 51 FR 26206, July 21, 1986, specifically note that seats were excluded because the recently-adopted standards for flammability of seat cushions will greatly inhibit involvement of the seats.

Subsequently, the Final Rule, amendment 25-83, 60 FR 6615, March 6, 1995, clarified the definition of minimum panel size by stating that it is not possible to cite a specific size that will apply in all installations; however, as a general rule, components

with exposed surface areas of one square foot or less may be considered small enough that they do not have to meet the new standards. Components with exposed surface areas greater than two square feet may be considered large enough that they do have to meet the new standards. Those with exposed surface areas greater than one square foot, but less than two square feet, must be considered in conjunction with the areas of the cabin in which they are installed before a determination could be made.

The FAA issued Policy Statement PS-ANM100-97-112-39, Guidance for Flammability Testing of Seat/Console Installations, on October 17, 1997 (<http://rgl.faa.gov>). That document was issued when it became clear that seat designs were evolving to include large, non-metallic panels with surface areas that would impact survivability during a cabin fire event, comparable to partitions or galleys. The document noted that large surface area panels must comply with heat release and smoke emission requirements, even if they were attached to a seat. If the FAA had not issued such policy, seat designs could have been viewed as a loophole to the airworthiness standards that would result in an unacceptable decrease in survivability during a cabin fire event.

In October of 2004, an issue was raised regarding the appropriate flammability standards for passenger seats that incorporated non-traditional, large, non-metallic panels in lieu of the traditional metal covered by fabric. The FAA determined that special conditions would be promulgated to apply the standards defined in 14 CFR 25.853(d) to seats with large, non-metallic panels in their design.

These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

Applicability

As discussed above, these special conditions are applicable to the Mitsubishi Aircraft Corporation Model MRJ-200 airplane. Should Mitsubishi Aircraft Corporation apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well.

Conclusion

This action affects only a certain novel or unusual design feature on one model of airplane. It is not a rule of general applicability.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

Authority Citation

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40113, 44701, 44702, 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Mitsubishi Aircraft Company Model MRJ-200 airplanes.

1. Except as provided in paragraph 3 of these special conditions, compliance with 14 CFR part 25, appendix F, part IV, Heat Release and part V, Smoke Emission, is required for seats that incorporate non-traditional, large, non-metallic panels that may either be a single component or multiple components in a concentrated area in their design.

2. The applicant may designate up to and including 0.139 square meter (1.5 square feet of non-traditional, non-metallic panel material per seat place that does not have to comply with paragraph 1 of these special conditions. A double seat assembly may have a total of 0.278 square meter (3.0 square feet) excluded on any portion of the assembly (e.g., outboard seat place 0.093 square meter [1 square foot] and inboard 0.185 square meter [2.0 square feet])).
3. Seats do not have to meet the test requirements of 14 CFR part 25, appendix F, parts IV and V, when installed in compartments defined in 14 CFR 25.853(e).

Issued in Des Moines, Washington, on October 16, 2018.

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